Claims 32-40 are presented for examination. Claims 1-3, 5-9, 11-14, 16-19, 21-24, 26-29, and 31 have been canceled, without prejudice or disclaimer of subject matter. Claims 32-40 have been added to provide Applicant with a more complete scope of protection. Claims 32 and 36-40 are in independent form. Favorable reconsideration is requested.

Claims 1-3, 5-9, 11-14, and 16 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patent 5,699,170 to Yokose et al. in view of U.S. Patent 5,757,379 to Saito, and further in view of U.S. Patent 5,227,893 to Ett; and Claims 17-19, 21-24, 26-29, and 31, as being obvious from Yokose et al. in view of U.S. Patent 5,379,070 to Retter et al., and further in view of Ett.

First, cancellation of Claims 1-3, 5-9, 11-14, 16-19, 21-24, 26-29, and 31 renders the rejections of those claims moot. For the following reasons, claims 32-40 are believed to be allowable over the art of record.

The present invention is directed to image communication apparatuses and methods such as a color facsimile apparatus. In conventional color facsimile apparatuses, image data obtained by scanning an image on a sheet is compressed and stored in a memory as a JPEG image data. When adding transmission information for a header or footer on the image, the JPEG image data is read from the memory and is expanded to the original image data. Then, the transmission information is added to the original image data, and the original image data to which the transmission information is added is re-compressed and transmitted.

Claim 32 is directed to a color facsimile apparatus which includes reading means for reading an image, generating means for generating image data representing the image, and extracting means for extracting data from the image data in minimum processing units for JPEG compression processing. Embedding means embeds transmission information for a header or footer in the unit of extracted data when the unit of the extracted data is a unit of the extracted data in which the transmission information should be embedded. Compressing means executes JPEG compression processing for each unit of the extracted data including the unit of the extracted data in which the transmission information is embedded, and stores compressed data in a memory. Forming means forms a JPEG image data of one page based on the compressed data stored in the memory, and transmitting means transmits the JPEG image data.

Claim 32 is directed to a color facsimile apparatus. By virtue of the features of Claim 32, the processing can be shortened, since the apparatus does not expand and re-compress the JPEG image data. The apparatus of Claim 32 embeds the transmission information in the original image data before compressing the data. Then, JPEG compression processing is executed for the original image data in which the transmission information is embedded, and JPEG image data of one page is formed and transmitted. In this way, the apparatus of Claim 32 can forego expanding and re-compressing the JPEG image data.

Yokose et al., as understood by Applicant, relates to communications between image communication systems which include image output means having different performance capabilities.

- 9 -

Saito, as understood by Applicant, relates to an image communicating apparatus which provides so-called proper display of received images with facilitated user control. Fig. 3(a) shows the data format of communication image data. The communication image data consists of a communication text header 31 including fields of the total number of pages and the data compression mode, and a plurality of sets of page header 32 and image data 33 for individual text pages. The page header 32 includes fields of the page size, image edit instruction information such as the rotational direction, and the coded data size.

Ett, as understood by Applicant, relates to pseudo-bar code control of image transmission. Information needed for indexing or routing of facsimile images transmitted by standard facsimile means using CCITT protocols can be carried in the image by a psuedo bar code imbedded in the first line or lines of the image. The bar code is machine generated from operator input via a keyboard. The use of multiple lines provides a bar code pattern which can be read by normal bar code reading means.

Retter et al., as understood by Applicant, relates to parallel encoding and decoding of DCT compression and decompression algorithms. A frame of image data can be vertically sliced, with each slice operated on by a dedicated encoding device and with the encoded slice data concatenated to form the encoded frame of data. Decoding speed is increased by using a plurality of decoding devices in parallel with each decoder having a Huffman decoder and a coefficient dequantizer through which all coded data flows. Only assigned blocks of data are operated on by the IDCT unit in each decoder. Each decoder device can have a plurality of IDCT units for operating on assigned blocks of data.

As explained above, the apparatus of Claim 32 embeds the transmission information in the original image data before compressing the data. Then, JPEG compression processing is executed for the original image data in which the transmission information is embedded, and JPEG image data of one page is formed and transmitted.

In general, JPEG compression processing for color image data is executed by the following procedure. Color image data scanned by a scanner is represented as RGB color mode data. The RGB color mode data is converted to YCC color mode data. After the amount of YCC color mode data is reduced by subsampling, a JPEG compression processing is executed in predetermined units at the ratio of the subsampling. Each predetermined unit is referred to as an MCU (minimum coded unit). If the ratio "Y:C:C" is "4:1:1", one MCU is defined as 16 X 16 pixels.

The apparatus of Claim 32 applies such a JPEG compression processing to adding a header or footer to JPEG image data. The apparatus of Claim 32 extracts data from original image data in minimum processing units (i.e. MCUs) for JPEG compression processing. Then, transmission information for a header or footer is embedded in the unit of the extracted data when the unit of the extracted data is a unit of the extracted data in which the transmission information should be embedded, and JPEG compression processing is executed for each unit of the extracted data including the unit of the extracted data in which the transmission information is embedded. The compressed data are stored in a memory, and the compressed data stored in the memory is transmitted to a facsimile apparatus in the form of JPEG image data of one page.

None of Yokose et al., Saito, Ett, and Retter et al. teaches or suggests applying a conventional JPEG compression processing for color image data in a facsimile apparatus to adding a header or footer to JPEG image data. In particular, nothing has been found in Yokose et al., Saito, Ett, or Retter et al., either separately or in any permissible combination (if any) that would teach or suggest embedding transmission information for a header or footer in a unit of extracted data extracted from original image data before compressing the data, executing JPEG compression processing for the original image data in which the transmission information is embedded, and forming and transmitting JPEG image data of one page based on the compressed data, as recited in Claim 32.

For at least these reasons, Claim 32 is believed to be patentable over Yokose et al., Saito, Ett, or Retter et al., either separately or in any permissible combination (if any).

Independent Claims 36-40 each recite features similar to those discussed above with respect to Claim 32 and therefore are also believed to be patentable over the cited prior art for the reasons discussed above.

A review of the other art of record has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.
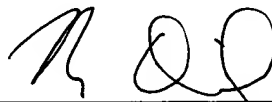
The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of

the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

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